Aug. 25, 1970 V. A. MUTKA 3,525,548

MOUNTING FOR THE FENDER DECK OF A TRACTOR

Filed June 24, 1968 2 Sheets-Sheet 1

FIG. 1

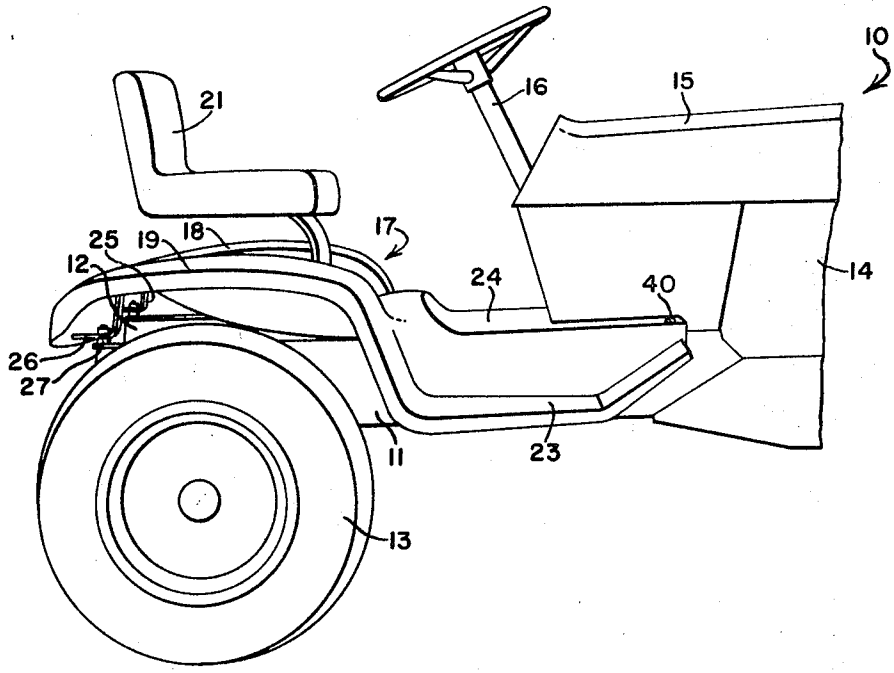
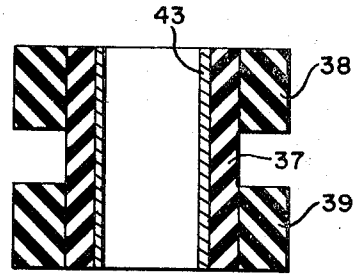


FIG. 4



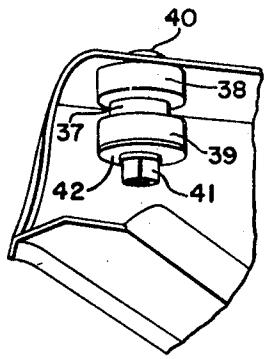


FIG. 3

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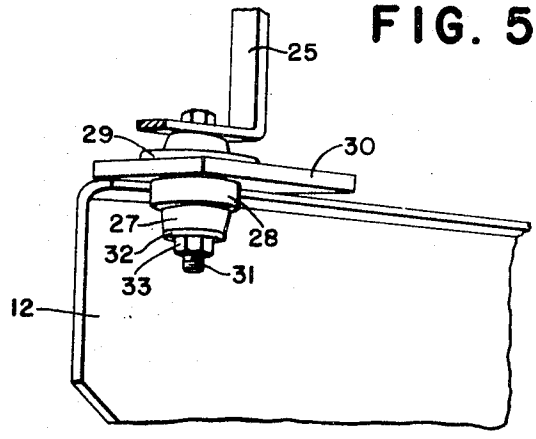
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MOUNTING FOR THE FENDER DECK OF A TRACTOR

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FIG. 5



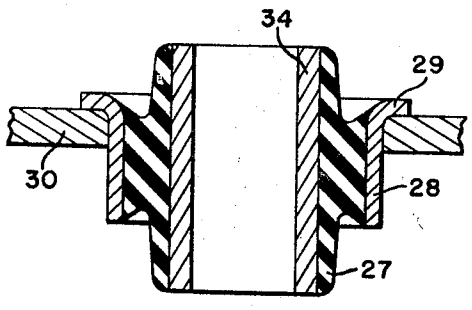
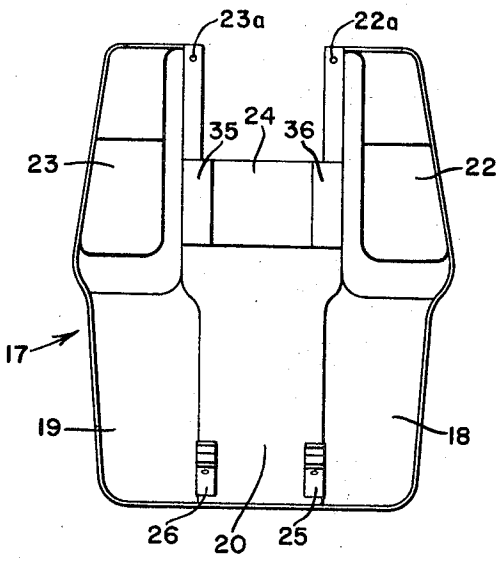


FIG. 6

FIG. 2



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MOUNTING FOR THE FENDER DECK OF A TRACTOR

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Int. Cl. B62d 25/22
U.S. Cl. 296—35 5 Claims

ABSTRACT OF THE DISCLOSURE

The fender deck of a lawn and garden tractor is mounted on the tractor frame through resilient mounts which prevent a major portion of the vibrations set up by the tractor engine from being passed on to the fender deck and the operator.

BACKGROUND OF THE INVENTION

The present invention relates generally to the mounting of a fender deck on a tractor frame, and more particularly to such a mounting which will isolate a portion of the vibrations set up in the tractor frame by the tractor engine from the fender deck and the tractor operator.

It has become common practice to provide lawn and garden tractors with an operator's platform which includes integral fenders and footrests. Such a platform, commonly called a fender deck, is generally mounted directly on the tractor main frame and the operator's seat is mounted on the platform. By making the fenders, seat-mounting platform, and footrests of a single-piece construction, the aesthetic value of the tractor is increased and manufacturing costs kept at a minimum. However, since the fender deck is mounted directly on the tractor frame, an intolerable portion of the vibrations set up in the frame by the tractor engine are passed on to the operator. These vibrations present a particular problem in the footrests. It takes very little time before the vibrations in the footrests begin to excite the nerves of the operator's feet and cause an uncomfortable tickling sensation, and if the operation of the tractor is sustained over a long period of time, the operator's feet become numb.

Since the main frame of a lawn and garden tractor is relatively light, very little can be done to prevent the vibrations of the engine from setting up vibrations in the frame. This is particularly true when the tractor is provided with a belt drive because the engine must be mounted directly on the frame in order to maintain the belt sheaves in alignment. Therefore, it becomes necessary to prevent the vibrations present in the tractor frame from being passed on to the fender deck.

SUMMARY OF THE INVENTION

An object of the present invention is to provide a novel and improved means of mounting a fender deck on a tractor frame.

Another object of the invention is to provide a shock or vibration mounting for the fender deck of a lawn and garden tractor which will isolate the operator from engine vibrations.

The above objects are accomplished by providing six resilient mounts for the fender deck. The mounts are so positioned that the weight of the operator is normally carried by four of the mounts. Two of the normal weight-carrying mounts are positioned at the rear of the fender deck behind the seat-mounting platform, while the other two are positioned rearwardly of the forward end of the footrests but in front of the seat-mounting platform. The two remaining resilient mounts are positioned at the forward end of the footrests and normally function to keep the footrests in proper position with respect to the tractor frame and prevent the footrests from engaging the tractor

frame when the weight of the operator is placed on the footrests, for example, when mounting or dismounting. With the resilient mounts positioned as indicated, the weight of the operator will resist movement of the fender deck and the four resilient mounts which normally carry the weight of the operator will yield to absorb the vibrations. Since the remaining two mounts do not hold the footrests tightly to the frame, but allow for slight relative movement, the vibrations are not passed from the frame to the footrest. The relative movement between the footrests and the frame is essential since the footrests normally do not carry sufficient weight to resist movement and therefore the two forward resilient mounts would not yield sufficiently to absorb the vibrations.

The above objects and the details of construction of the present invention will become apparent from a reading of the following detailed description taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is an elevational view of the rear end portion of a tractor illustrating a fender deck in the position it assumes on the tractor frame;

FIG. 2 is a bottom plan view of the fender deck illustrated in FIG. 1;

FIG. 3 is a perspective view of the forward portion of one of the footrests of the fender deck illustrating one of the forwardmost mounts;

FIG. 4 is a sectional view of the mount illustrated in FIG. 3;

FIG. 5 is a perspective view of a rear end portion of the tractor frame illustrating one of the rearmost mounts; and

FIG. 6 is a sectional view of the mount illustrated in FIG. 5.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, and particularly to FIGS. 1 and 2, a tractor is indicated generally at **10** and includes spaced main frame members **11** and **12** carried by wheels **13**, a forward engine compartment **14**, a hood **15**, and steering mechanism **16**. Each of the main frame members is constructed from an L-shaped beam which is inverted to provide a large vertically extending leg and a short horizontally extending leg. A fender deck, indicated generally at **17**, is mounted on the frame members **11** and **12**. The fender deck is of one-piece construction and includes laterally spaced fenders **18** and **19** which are positioned over the rear wheels **13**, a mounting surface **20** for the operator's seat **21** intermediate the fenders **18** and **19** and positioned over the frame members **11** and **12**, laterally spaced footrests **22** and **23** forwardly of the fenders and positioned at the sides of the frame members **11** and **12**, and a connecting platform **24** intermediate a rear portion of the footrests **22** and **23** and positioned over the main frame members **11** and **12**. A pair of brackets **25** and **26** are secured to the bottom of the mounting surface **20** at the rear end thereof and serve as a means to secure the fender deck to the rearmost resilient mounts.

The rear mounts are best illustrated in FIGS. 5 and 6, and each includes a tubular member **27** which is constructed of rubber or other suitable resilient material and is provided with an enlarged annular portion intermediate its length. The enlarged portion of the resilient tubular member **27** is bonded to a metal tube **28** which is shorter than the resilient tubular member **27** so that the member **27** extends beyond both ends of the tube **28**. The upper end of the tube **28** is flanged as at **29** to provide a supporting shoulder, and the tube **28** is press fit within an

opening provided in a mounting plate **30** so that the flange **29** rests on the plate **30**. The mounting plate **30** is welded or otherwise suitably secured to the rear portion of one of the main frame members. Thus, it can be seen that the resilient tubular member **27** is suspended from the frame member by the mounting plate **30** and metal tube **28**. Each of the brackets **25** and **26** rests directly on the upwardly extending end of one of the resilient tubular members **27** and is held in position thereon by a bolt **31** which extends through a suitable opening provided in the bracket and through the resilient tubular member **27**. The bolt **31** is held securely within the resilient tubular member **27** by a washer **32** and nut **33**. A ferrule **34** is positioned within the resilient tubular member **27** so that the nut **33** can be tightened without compressing the resilient tubular member **27**. From the foregoing, it can be seen that the rear end portion of the fender deck **17** is entirely supported by the resilient tubular member **27** so that any vibrations present in the frame members **11** and **12** would be required to pass through the resilient tubular member **27** prior to being passed on to the fender deck.

The intermediate mounts are illustrated in FIG. 2, and take the form of a pair of resilient pads **35** and **36**. The mounting pads **35** and **36** are secured to the bottom of the connecting platform **24** by a pressure sensitive adhesive and rest directly on the horizontally extending legs of the frame members **11** and **12**. The mounting pads **35** and **36** are not secured to the frame members since the rear and forward mounts maintain the fender deck in position so that the pads are always overlying the horizontally extending legs of the main frame members **11** and **12**. The mounting pads **35** and **36** can be made of any resilient material but are preferably constructed of a closed cell neoprene rubber.

The forward mounts are illustrated in FIGS. 3 and 4, and are secured to the forward portion of horizontal flanges on the footrests. Each of the forward mounts includes a guide **37** and a pair of bumpers **38** and **39**. The guide **37** is a resilient tube which is formed of rubber or other suitable resilient material. Each of the bumpers **38** and **39** is formed of rubber or other suitable resilient material and is of annular shape. The guides **37** extend through openings provided in the horizontally extending legs of the frame members **11** and **12**, the bumpers **38** are positioned over the upper end of the guides **37** and are positioned between the horizontally extending legs of the frame members and the horizontal flanges on the footrests, and the bumpers **39** are positioned over the lower end of the guides **37** beneath the horizontally extending legs of the main frame members. The guides **37** and bumpers **38** and **39** are maintained in position by bolts **40** which extend through openings **22***a* and **23***a* provided in the horizontal flanges on the footrests and through the guides **37**, nuts **41** which threadedly engage the lower end of the bolts **40**, and washers **42** positioned between the nuts **41** and the bumpers **39**. A ferrule **43** extends through each guide **37** so that the nuts **41** can be tightened without compressing the guides **37**. The guides **37** and ferrules **43** are of sufficient length so that the bumpers **38** and **39** are not normally forced against the surfaces of the horizontally extending legs of the frame members, and the openings provided in the horizontally extending legs are of sufficient size to provide a loose or sloppy fit between the guides **37** and the openings so that a small amount of relative movement between the frame members and the footrests is allowed. However, when the operator places his entire weight on one of the footrests to mount or dismount from the tractor, the bumper **38** will prevent the horizontal flange of the footrest from banging against the frame member. If, prior to assembly, the fender deck has been sprung so that the forward portion of the footrests are not properly aligned with the main frame members, the forward mounts will resiliently hold the forward portion of the footrests in proper alignment.

From the above description it can be seen that when the operator is sitting on the tractor seat **21**, the major portion of his weight is carried by the rear and intermediate mounts. The weight of the operator will resist any movement of the fender deck so that vibrations in the tractor frame members **11** and **12** will be absorbed by the resilient pads **35**, **36** and the resilient tubular members **27**. The footrests **22**, **23** or the forward portion of the fender deck do not normally carry sufficient weight to resist movement, but as indicated above, the forward mounts do not hold the footrests tightly to the frame members so that a small amount of relative movement between the footrests and the frame members can occur. Therefore, vibrations in the frame members **11** and **12** will not be passed on to the footrests **22** and **23** through the forward mounts.

It is not essential that the resilient mounts be constructed exactly as described above, but can take any form which will provide a resilient mounting. For example, the rear mounts can be constructed in any manner which will provide a resilient cushion between the brackets **25** and **26** and the plates **30**.

I claim:

1. In the combination of a vehicle having a main frame mounted on forward and rear pairs of wheels; deck means mounted on said frame; said deck means including integral fenders, footrests, and a mounting surface for an operator's seat; said fenders overlying the rear pair of wheels and said footrests being located forwardly of said fenders; the improvement comprising: a first pair of laterally spaced resilient mounts positioned intermediate and interconnecting said frame and the rear end portion of said deck means; a pair of laterally spaced resilient positioning means loosely interconnecting said frame and the forward end of said deck means for limited relative movement therebetween without deforming the resilient positioning means; and a second pair of laterally spaced resilient mounts positioned between said frame and an intermediate portion of said deck means.

2. The combination as set forth in claim **1** wherein said first pair of mounts and said positioning means maintain said deck means in proper position with respect to the frame; and said second pair of mounts consist of a pair of resilient pads secured to the bottom of said deck means.

3. In the combination of a vehicle having a pair of laterally spaced longitudinally extending main frame members mounted on forward and rear pairs of laterally spaced wheels; at least a portion of each of said main frame members being of inverted L-shaped configuration; deck means mounted on said main frame members; said deck means including integral fenders, a mounting surface for an operator's seat, footrests, and platform means; said fenders being positioned over said rear pair of wheels; said mounting surface being positioned intermediate said fenders; said footrests being positioned forwardly of said fenders alongside the vertical legs of said main frame members and each including a horizontal flange overlying the horizontal legs of said main frame members; and said platform means extending across said main frame members and interconnecting the rear end portion of said footrests; the improvement comprising: vibration isolating means mounting said deck means on said frame means; said vibration isolating means including a pair of laterally spaced resilient rear mounts interconnecting the rear end portion of said deck means and the rear end portions of said main frame members, a pair of laterally spaced resilient pads sandwiched between the horizontal legs of said frame members and said platform means, and a pair of resilient positioning means loosely interconnecting the forward portions of said footrests and said frame members.

4. The combination as set forth in claim **3** wherein each of said positioning means includes a pair of resilient bumpers which loosely sandwich the horizontal leg of

one of said frame members with one of said bumpers lying between said leg and the horizontal flange of the associated footrest, a resilient tubular-shaped guide extending through openings provided in said bumpers and said horizontal leg, and means securing said bumpers and guide to said horizontal flange.

5. The combination as set forth in claim 4 wherein the opening provided in said horizontal leg is larger than the outside diameter of said guide to provide limited relative movement between said guide and said frame member.

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